

October 29, 2003

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-12 (canceled).

Claim 13 (new): A laminated heat-resistant separator, comprising:

a laminated non-woven fabric, comprising:

at least two laminated non-woven fabric layers, including at least one non-woven fabric layer comprising a high-melting resin and having:

- an average fiber diameter of 1 to 20 μm ,
- a basis weight of 5 to 300 g/m^2 ,
- air permeability of 1 to 300 $\text{cc/cm}^2/\text{sec}$, and
- a thickness of 0.01 to 1.0 mm,

wherein said at least two laminated non-woven fabric layers are laminated such that at an interface between layers, only a top and/or bottom surface of a layer is in communication with only a top and/or bottom surface of a subsequent layer.

Claim 14 (new): The laminated heat-resistant separator according to Claim 13, having a

October 29, 2003

real part impedance of $20 \Omega \cdot \text{cm}^2$ or less at a frequency of 10 KHz and normal temperature.

Claim 15 (new): The laminated heat-resistant separator according to any one of Claims 13 or 14, having a maximum real part impedance at a frequency of 10 KHz and 100 to 180°C is 100 times or less of the real part impedance at normal temperature and $200 \Omega \cdot \text{cm}^2$ or less in the absolute value.

Claim 16 (new): The laminated heat-resistant separator according to any one of Claims 13 to 15, wherein said high melting resin is selected from the group consisting of polyester, polyphenylene sulfide, polymethyl pentene and polyamide.

Claim 17 (new): The laminated heat-resistant separator according to Claim 16, wherein said polyester is polybutylene terephthalate.

Claim 18 (new): The laminated heat-resistant separator according to any one of Claims 13 to 17, wherein said non-woven fabric is melt-blown.

Claim 19 (new): The laminated heat-resistant separator according to claim 13, wherein at least two non-woven fabric layers comprise a high-melting resin.

October 29, 2003

Claim 20 (new): The laminated heat-resistant separator according to Claim 13, further comprising at least one non-woven fabric layer having a shut-down function.

Claim 21 (new): The laminated heat-resistant separator according to claim 20, said at least one non-woven fabric layer having a shut-down function comprises a low melting resin.

Claim 22 (new): The laminated heat-resistant separator according to Claim 21, said low-melting resin comprises polyolefin.

Claim 23 (new): A laminated heat-resistant separator comprising:
two or more laminated layers of melt-blown, non-woven fabric of polyphenylene sulfide, said fabric having

a fiber diameter of 2.0 to 8.0 μm ,

a basis weight of 20 to 60 g/m^2 ,

air permeability of 10 to 200 $\text{cc/cm}^2/\text{sec}$,

a thickness of 100 to 300 μm , and

strength of 10 N/50 mm or more in the MD direction,

wherein said at least two laminated non-woven fabric layers are laminated such that at an interface between layers, only a top and/or bottom surface of a layer is in communication with only a top and/or bottom surface of a subsequent layer.

October 29, 2003

Claim 24 (new): The laminated heat-resistant separator of polyphenylene sulfide according to Claim 23, wherein said melt-blown, non-woven fabric of polyphenylene sulfide for the laminated layers has an average fiber diameter of 2.0 to 8.0 μm , basis weight of 40 to 80 g/m^2 , air permeability of 5 to 20 $\text{cc/cm}^2/\text{sec}$, thickness of 100 to 180 μm , and strength of 40 N/50 mm or more in the MD direction.

Claim 25 (new): The heat-resistant separator of any one of Claims 13 to 23 which is used for battery or capacitor.

Claim 26 (new): The laminated heat-resistant separator according to claim 19, said separator comprising: a polyamide layer and a polybutylene terephthalate layer; a polyphenylene sulfide layer and a polybutylene terephthalate layer; or a polyamide layer and a polyphenylene sulfide layer.

Claim 27 (new): The laminated heat-resistant separator according to claim 21, said separator comprising: a polyamide layer and a polypropylene layer; a polyamide layer and a polyethylene layer; a polybutylene terephthalate layer and a polypropylene layer; a polybutylene terephthalate layer and a polyethylene layer; a polyphenylene sulfide layer and a polypropylene layer; a polyphenylene sulfide layer and a polyethylene layer; a polypropylene layer, a polybutylene terephthalate layer and a polyethylene layer; or a polypropylene layer, a polyphenylene sulfide layer

Amendment Under 37 CFR §1.111
U.S. Patent Application Serial No. 09/917,804
Reply to Office Action of **August 20, 2003**

October 29, 2003

and a polyethylene layer.

Claim 28 (new): The laminated heat-resistant separator according to any one of claims 13 or 23, wherein layers are laminated using heat and compression.

Claim 29 (new): The laminated heat-resistant separator according to any one of claims 13 or 23, wherein said layers are laminated using ultrasonication and compression.